

Part III**Signals****A****General Provisions****Sec. 14-298-700 Legal Traffic Authority**

Traffic control signals shall be installed or caused to be installed only by the traffic authority having jurisdiction to install, operate and maintain traffic control signals on public highways in accordance with Section 14-299 of the general statutes.

Sec. 14-298-701 Standardization

- (a) All traffic control signals used on public highways shall conform as noted in these regulations. Any exception to these regulations shall be based on an engineering study and shall be subject to approval by the State Traffic Commission. Traffic control signals of non-standard design or application in operation or in use on the effective date of these regulations may continue to operate, but shall be replaced as soon as feasible, by traffic control signals to conform with Section 14-298-700 through Section 14-298-741 of these regulations.
- (b) All dimensions in this part are expressed in English units. Any Connecticut Department of Transportation standards, manuals and guidelines that have been developed in metric dimensions are considered equivalent.

Sec. 14-298-702 Installation and Operation of Signals

Traffic control signals shall be installed and operated only when: the warrants for installation as determined by competent engineering study completed in conjunction with the Manual on Uniform Traffic Control Devices (latest edition) are satisfied, and said signals are approved by the State Traffic Commission.

Sec. 14-298-703 Area of Control

A traffic control signal shall control traffic only at the intersection or mid-block location where the installation is placed.

Sec. 14-298-704 Portable Traffic Control Signals

Portable traffic control signals shall conform to the standards and requirements as set forth in these regulations.

Sec. 14-298-705 Meaning of Signal Indications

The following meanings shall be given to highway traffic signal indications, except those on pedestrian signals:

- (a) Green indications shall have the following meanings:
 - (1) Traffic facing a circular green may proceed straight through or turn right or left except as such movement is modified by lane-use signs, turn prohibition signs, lane markings or roadway design. But, vehicular traffic, including vehicles turning right or left, shall yield the right-of-way to other vehicles and to pedestrians lawfully within the intersection or an adjacent crosswalk, at the time such signal indication is exhibited.
 - (2) Traffic facing a green arrow, shown alone or in combination with another indication, may cautiously enter the intersection only to make the movement indicated by such arrow or such other movement as is permitted by other indications shown at the same time. Such vehicular traffic shall yield the right-of-way to pedestrians lawfully within an adjacent crosswalk and to other traffic lawfully using the intersection.
 - (3) Unless otherwise directed by a pedestrian signal, pedestrians facing any green indication, except when the sole green indication is a turn arrow, may proceed across the roadway within any marked or unmarked crosswalk.
- (b) Steady yellow indications shall have the following meanings:
 - (1) Traffic facing a steady circular yellow or yellow arrow signal is thereby warned that the related green movement is being terminated or that a red indication will be exhibited immediately thereafter when vehicular traffic shall not enter the intersection.
 - (2) Pedestrians facing a steady circular yellow or yellow arrow signal, unless otherwise directed by a pedestrian signal, are thereby advised that there is insufficient time to cross the roadway before a red indication is shown, and no pedestrian shall then start to cross the roadway.

(c) Steady red indications shall have the following meanings:

- (1) Vehicular traffic facing a steady circular red signal alone shall stop at a clearly marked stop line, but if none, before entering the crosswalk on the near side of the intersection, or if none, then before entering the intersection and shall remain standing until an indication to proceed is shown except as provided in (2) below.
- (2) Except when a sign is in place prohibiting a turn, vehicular traffic facing any steady red signal may cautiously enter the intersection to turn right after stopping as required by (1) above. Such vehicular traffic shall yield the right-of-way to pedestrians and other vehicles lawfully using the intersection.
- (3) Unless otherwise directed by a pedestrian signal, pedestrians facing a steady circular red signal alone or red arrow signal alone shall not enter the roadway.
- (4) Vehicular traffic facing a steady red arrow signal shall not enter the intersection to make the movement indicated by the arrow and, unless entering the intersection to make a movement permitted by another signal, shall stop at a clearly marked stop line, but if none, before entering the crosswalk on the near side of the intersection, or if none, then before entering the intersection and shall remain standing until an indication permitting the movement indicated by such red arrow is shown except as provided in (2) above.

(d) Flashing signal indications shall have the following meanings:

- (1) Flashing red (stop signal) - when a red lens is illuminated with rapid intermittent flashes, drivers of vehicles shall stop at a clearly marked stop line, but if none, before entering the crosswalk on the near side of the intersection, or if none, at the point nearest the intersecting roadway where the driver has a view of approaching traffic on the intersecting roadway before entering the intersection, and the right to proceed shall be subject to the rules applicable after making a stop at a "Stop" sign.
- (2) Flashing yellow (caution signal) - when a yellow lens is illuminated with rapid intermittent flashes, drivers of vehicles may proceed through the intersection or past such signal only with caution.
- (3) Flashing red arrow and flashing yellow arrow indications have the same meaning as the corresponding flashing circular indications; except they apply only to drivers of vehicles intending to make the movements indicated.

Sec. 14-298-706 Application of Signal Indications

Basic displays used in signal operations are the steady circular red, circular yellow or circular green indication, used on each of the approaches. The application for these signal indications shall be as follows:

- (a) A steady circular red indication:
 - (1) Shall be given when it is intended to prohibit traffic, except pedestrians directed by a pedestrian signal, from entering the intersection or other controlled area.
 - (2) May be displayed with the appropriate green arrow indications when it is intended to permit traffic to make a specified turn or turns and to prohibit traffic from proceeding straight ahead through the controlled area. This display is not required where it is physically impossible for traffic to go straight ahead, as at the head of a "T" intersection.
- (b) A steady circular yellow indication:
 - (1) Shall be given following a circular green indication in the same signal face, except if the signal face controls an exclusive left-turn lane and the circular green indication is to be followed by a green arrow indication.
 - (2) Is an optional alternative to a yellow arrow indication following a green arrow indication in a separate signal face used exclusively to control a single directional movement.
- (c) A steady circular green indication shall be given only when it is intended to permit traffic to proceed in any direction which is lawful and practical.
- (d) Steady red arrow, yellow arrow and green arrow indications may be used in lieu of the corresponding circular indications at the following locations:
 - (1) On an approach intersecting a one-way street.
 - (2) Where certain movements are prohibited.
 - (3) Where certain movements are physically impossible.
 - (4) On an intersection approach which has an exclusive lane for turning movements.
 - (5) Where turning movements are "protected" from conflicting movements by other indications or by the signal sequence.

- (6) Where all the movements on the approach do not begin or end at the same time and where the indications for the turning movements will also be visible to traffic with other allowable movements.
- (e) Steady arrow indications are used as follows:
 - (1) A steady yellow arrow indication shall be used following a green arrow indication which has been displayed simultaneously with a circular red indication in the same signal face, except in the following case. When a green right turn arrow (or left turn arrow displayed to one-way traffic) is followed immediately by a circular green indication shown alone, during which time no prohibitions are in effect for the indicated turn, the yellow arrow display is not desirable.
 - (2) A steady yellow arrow indication or optional circular yellow shall follow a green arrow indication in a signal face which is used exclusively to control a single directional movement.
 - (3) A steady yellow arrow indication may be used to indicate the clearance interval following the termination of green arrow indication which has been displayed simultaneously with a continuing circular green indication in the same signal face.
 - (4) A steady green arrow indication shall be used only to allow vehicular movements which are completely protected from conflict with other vehicles moving on a green indication or with pedestrians crossing in conformance with a "Walk" or flashing "Dont Walk" indication.
 - (5) A steady left green arrow indication shall be used as the green display on a signal face which controls an exclusive left turn lane, if that left turn movement is protected by the signal sequence.
- (f) The following combinations of signal indications shall not be simultaneously displayed on any one signal face:
 - (1) Circular green with circular yellow.
 - (2) Straight-through green arrow with circular red.
 - (3) Circular red with circular yellow.
 - (4) Circular green with circular red.
- (g) The above combinations shall not be simultaneously displayed in different signal faces on any one approach unless:

- (1) One of the faces is a turn signal controlling only an exclusive turn lane and a sign "Left" or "Right Turn Signal" is located adjacent to each such signal face.
 - (2) One of the faces is a turn signal controlling only an exclusive turn lane and consists entirely of arrow indications.
 - (3) The signal faces are shielded, hooded, louvered, positioned or designed so that the combination is not confusing to approaching drivers.
- (h) When a traffic control signal is put on flashing operation, normally a yellow indication should be used for the major street and a red indication for the other approaches. The following applications shall apply whenever signals are placed on flashing operation:
- (1) A circular yellow indication shall be flashed instead of any yellow arrow indication which may be included in that signal face.
 - (2) No circular green or green arrow indication or flashing yellow indication shall be terminated and immediately followed by a steady red or flashing red indication without the display of the steady yellow change indication; however transition may be made directly from a circular green or green arrow indication to a flashing yellow indication.
 - (3) All signal faces on an approach shall flash the same color, either yellow or red (circular or arrow), except that separate signal faces for separately controlled turn movements may be flashed the other color. The requirements of other sections of these regulations regarding shielding or positioning of conflicting displays apply to flashing indications as well as steady indications. The flashing yellow signal indication for through traffic does not have to be shielded or positioned to prevent visual conflict for drivers in the left turn lane.

Sec. 14-298-707 Number of Lenses Per Signal Face

Each signal face, except in pedestrian signals, shall have at least three lenses, but not more than five. The lenses shall be red, yellow or green in color and shall be given a circular or arrow type of indication. Allowable exceptions to the above are:

- (1) Where a single section green arrow lens is used alone to indicate a continuous movement.
- (2) Where a variable indication signal section is used to display alternately a green arrow and a yellow arrow.

Sec. 14-298-708 Size and Design of Signal Lenses

- (a) The aspect of all signal lenses, except in pedestrian signals, shall be circular. There shall be two sizes for lenses, eight inches and twelve inches nominal diameter.
- (b) Arrows shall be pointed vertically upward to indicate a straight-through movement and in a horizontal direction to indicate a turn at approximately right angles. When the angle of the turn is substantially different from a right angle, the arrow should be positioned on an upward slope at an angle approximately equal to that of the turn.
- (c) Each arrow lens shall show only one arrow direction. The alternate display of two arrow indications in the same lens, a green arrow or a yellow arrow shall be permitted. The arrow shall be the only illuminated part of the lens visible.
- (d) In no case shall letters or numbers be displayed as part of a vehicular signal indication.

Sec. 14-298-709 Arrangement of lenses in Signal Faces

- (a) The lenses in a signal face shall be arranged in a vertical or horizontal straight line except that in a vertical array lenses of the same color may be arranged horizontally adjacent to each other at right angles to the basic straight line arrangement. Such clusters shall be limited to two identical lenses or to two or three different lenses of the same color.
- (b) In each signal face, all red lenses in vertical signals shall be located above and in horizontal signals shall be located to the left of all yellow and green lenses.
- (c) The relative positions of lenses within the signal face shall be as follows:
 - (1) In a vertical signal face from top to bottom:
 - Circular red
 - Left turn red arrow
 - Right turn red arrow
 - Circular yellow
 - Circular green
 - Straight through green arrow
 - Left turn yellow arrow

Left turn green arrow

Right turn yellow arrow

Right turn green arrow

- (2) In a horizontal signal face from left to right:

Circular red

Left turn red arrow

Right turn red arrow

Circular yellow

Left turn yellow arrow

Left turn green arrow

Circular Green

Straight through green arrow

Right turn yellow arrow

Right turn green arrow

- (3) In a cluster, identical signal indications may be repeated in adjacent vertical or horizontal locations within the same signal face. If adjacent indications in a cluster are not identical, their arrangement shall follow paragraph 1 or 2 above, as applicable.

Sec. 14-298-710 Illumination of Lenses

Each signal lens shall be illuminated independently.

Sec. 14-298-711 Number and Location of Signal Faces

- (a) The primary consideration in signal face placement shall be visibility.
- (b) A minimum of two signal faces for each approach shall be provided and should be continuously visible from a point determined by a competent engineering study based on speed and visibility distances.
- (c) Separate signal faces should be used when protected only turning movements are controlled by green arrows.
- (d) Where physical conditions prevent drivers from having a continuous view of at least two signal indications, as determined above, a "Signal Ahead" sign shall be erected to warn approaching traffic.

Hazard identification beacons may be surmounted upon these signs to emphasize the message. Special warning signs may be used to indicate driver action in adverse situations.

- (e) A single signal face is permissible for the control of an exclusive turn lane. Such signal face shall be in addition to the minimum of two signal faces for through traffic.
- (f) At least one and preferably all of the signal faces required should be located within the range of forty to one hundred twenty feet from the stop bar, except at intersections where multi-lane cross streets or other conditions make it physically impractical. However, in no case shall this distance exceed one hundred fifty feet, unless a supplemental signal face is provided.
- (g) Where both of the signal faces required are post mounted, they shall be on the far side of the intersection - one on the right and one on the left or on the median island if practical, except as noted in (i) below.
- (h) Where all signal faces are suspended by span wire or mast arm, they shall be visible from the lane of approach but shall not be to the left of the centerline. Where conditions warrant, exceptions may be permitted. On one-way streets, it is permissible to erect signal faces on both sides of the medial line.
- (i) When deemed to be required, near-side post-mounted signals should be located as near as practicable to the stop line unless substantially greater visibility may be achieved by locating it elsewhere.
- (j) Where a signal face controls a specific lane or lanes of an approach, its transverse position should be unmistakably in line with the path of that movement.
- (k) Required signal faces for any one approach shall not be less than eight and should not be more than twenty feet apart measured horizontally between center of faces.
- (l) Supplemental signal faces should be used when an engineering study has shown that they are needed to achieve either advance or immediate intersection visibility. When used, they should be located to provide optimum visibility for the movement to be controlled. The following limitations apply:
 - (1) Left turn arrows shall not be used in near right faces.
 - (2) Right turn arrows shall not be used in far left faces. A far side median mount signal shall be considered as a far left signal for this application.

Sec. 14-298-712 Height of Signal Faces

- (a) The bottom of the housing of a signal face, not mounted over a roadway, shall not be less than eight feet nor more than fifteen feet above the sidewalk or, if none, above the pavement grade at the center of the highway.
- (b) The bottom of the housing of a signal face suspended over a roadway shall not be less than fifteen feet nor more than nineteen feet above the pavement grade at the center of the roadway.

Sec. 14-298-713 Vehicle Change Interval

- (a) A yellow vehicle change interval shall be used following each circular green interval and, after each green arrow interval if the movement is terminated.
- (b) In no case shall a circular yellow indication be displayed in conjunction with the change from circular red to circular green.
- (c) The exclusive function of the steady yellow interval shall be to warn traffic of an impending change in the right-of-way assignment.
- (d) Yellow vehicle change intervals should have a range of three to six seconds.
- (e) The yellow vehicle change interval should be followed by a short all-way red clearance interval of sufficient duration to permit the intersection to clear before cross traffic is released.
- (f) A clearance interval shall be provided between the termination of a green arrow indication and the showing of a green indication to any conflicting traffic movements.

Sec. 14-298-714 Coordination of Traffic Control Signals

Traffic control signals should normally be coordinated with one another when the normal travel time between the intersections is less than thirty seconds.

Sec. 14-298-715 Flashing Operation of Traffic Control Signals

- (a) The illuminating element in a flashing signal shall be flashed continuously at a rate of not less than fifty nor more than sixty times per minute.
- (b) The illuminated period of each flash shall be not less than half and not more than two-thirds of the total flash cycle.

Sec. 14-298-716 Continuity of Operation

- (a) A traffic signal installation shall be operated as a stop-and-go device or as a flashing device.
- (b) When a signal installation is not in operation it shall be hooded, turned or taken down to clearly indicate that the signal is not in operation.
- (c) When a traffic signal installation is being operated in the stop-and-go or flashing manner, at least one indication in each signal face shall be illuminated.

Sec. 14-298-717 Traffic Signals Near Grade Crossings

When a railroad/highway grade crossing actuated traffic control device is within 200' of a highway intersection controlled by traffic control signals, the two signal systems should be coordinated.

Sec. 14-298-718 Emergency Operation of Traffic Signals

Systems in which traffic control signals are preempted by emergency vehicles shall operate to permit a normal change interval to take place in the change from green to yellow to red (or flashing red) before arrival of the emergency vehicle at the preempted location.

Sec. 14-298-719 Maintenance of Traffic Control Signals

A record of the operation, malfunction and maintenance of an approved traffic control signal shall be kept by the permittee.

Sec. 14-298-720 Painting

The insides of visors (hoods) and the entire surface of louvers, and fins, and the front surface of backplates shall have a dull black finish to minimize light reflection to the side of the signals.

Sec. 14-298-721 Auxiliary Signs

- (a) Signal instruction signs used with traffic signals may be located adjacent to the signal face to which they apply.
- (b) Stop signs shall not be used in conjunction with any signal operation except:
 - (1) when the indication flashes red at all times or
 - (2) when a minor street or driveway is located within or adjacent to the controlled area of an extreme complex signalized intersection, but does not warrant separate signal control.

- (c) When used in conjunction with traffic signals, illuminated signs shall be designed and mounted in such a manner as to avoid glare and reflections that seriously detract from the signal indications.

B

Pedestrian Signals

Sec. 14-298-722 Meaning of Pedestrian Indications

The meanings of pedestrian signal indications either lettered or symbolized are as follows:

- (a) the don't walk indication, steadily illuminated, means that a pedestrian shall not enter the roadway in the direction of the indication.
- (b) the don't walk indication, while flashing, means that a pedestrian shall not start to cross the roadway in the direction of the indication, but that any pedestrian who has partly completed his crossing during the steady walk indication shall proceed to a sidewalk, or to a safety island.
- (c) the walk indication, steadily illuminated, means that pedestrians facing the signal indication may proceed across the roadway in the direction of the indication and shall be given the exclusive right of way by the drivers of all vehicles.
- (d) the walk indication, while flashing, means that there is a possible conflict of pedestrians with vehicles.

Sec. 14-298-723 Application of Pedestrian Signal Indications

Pedestrian signal indications shall be installed in conjunction with vehicular traffic signals under any of the following conditions:

- (a) when a traffic signal is installed under the pedestrian volume or school crossing warrant as referred to in Sections 4c-5 and 4c-6 respectively of the Manual on Uniform Traffic Control Devices (latest edition).
- (b) when an exclusive interval or phase is provided or made available for pedestrian movement in one or more directions, with all conflicting vehicular movements being stopped.
- (c) when vehicular indications are not visible to pedestrians such as on one-way streets, at "T" intersections, or when the vehicular indications are in a position which would not adequately serve pedestrians.
- (d) at established school crossings at intersections signalized under any warrant, as determined by an engineering study.

Sec. 14-298-724 Design of Pedestrian Signals

- (a) Pedestrian indications should attract the attention of and be readable to the pedestrian (day and night) at all distances from ten feet to the full width of the area to be crossed.
- (b) All pedestrian indications shall be rectangular in shape and shall consist of the lettered or symbolized messages "Walk" and "Don't Walk." Only internal illumination shall be used. Symbol designs are set forth in the "Standard Highway Signs" booklet.
- (c) When illuminated, the "Walk" indication shall be lunar white. All except the letters or symbols shall be obscured by an opaque material.
- (d) When illuminated, the "Don't Walk" indication shall be portland orange with all letters or symbols obscured by an opaque material.
- (e) When not illuminated, the "Walk" and "Don't Walk" messages shall not be distinguishable by pedestrians at the far end of the crosswalks they control.
- (f) The letters shall be at least three inches high or the symbols shall be at least six inches high for a crossing where the distance from the near curb to the pedestrian signal indication is sixty feet or less. For distances over sixty feet, the letters should be at least four and one half inches high and the symbols should be at least nine inches high.

Sec. 14-298-725 Location of Pedestrian Signals

- (a) Pedestrian signal faces shall be mounted with the bottom of the housing not less than eight feet nor more than ten feet above the sidewalk level, and so there is a pedestrian indication in the line of pedestrian's vision which pertains to the crosswalk being used.
- (b) The don't walk indication shall be mounted directly above or integral with the walk indication.
- (c) The pedestrian signal head shall be so positioned and adjusted as to provide maximum visibility at the beginning of the controlled crossing.
- (d) When mounted with other signal heads there shall be a physical separation between the two heads.

Sec. 14-298-726 Pedestrian Intervals and Phases

- (a) A pedestrian clearance interval shall always be provided where pedestrian signal indications are used. It shall consist of a flashing don't walk indication.
- (b) When a traffic signal installation is being operated as a flashing device, the pedestrian indications shall not be illuminated.

C**Other Highway Traffic Signals****Sec. 14-298-727 Hazard Identification Beacon**

- (a) A hazard identification beacon is one or more sections of a standard traffic signal head with a flashing circular yellow indication in each section.
- (b) A hazard identification beacon shall be used only to supplement an appropriate warning or regulatory sign or marker.
- (c) The hazard identification beacon shall not be incorporated within the border of the sign except for school speed limit signs. The edge of the housing should normally be located no closer than twelve inches outside the nearest edge.
- (d) Hazard identification beacons, when used at intersections, shall not face conflicting vehicular approaches.

Sec. 14-298-728 Speed Limit Sign Beacon

A speed limit sign beacon shall only be used and consist of one or more signal sections of a standard traffic control signal face, with flashing circular yellow signal indication in each signal section. The signal lenses shall have a nominal diameter of not less than 8 inches. If two lenses are used, they shall be vertically aligned, except that they may be horizontally aligned if the speed limit sign is longer horizontally than vertically. If two lenses are used, they shall be alternately flashed.

Sec. 14-298-729 Intersection Control Beacon

- (a) An intersection control beacon consists of one or more sections of a standard traffic signal head, having flashing circular yellow or circular red indications in each face.
- (b) They are installed and are used only at an intersection to control two or more directions of travel.

- (c) Application shall be limited to:
 - (1) Yellow on one route and red for remaining approaches
 - (2) Red for all approaches
- (d) A stop sign should be used with a flashing red intersection control beacon.
- (e) Flashing yellow indications shall not face conflicting vehicular approaches.

Sec. 14-298-730 Stop Sign Beacon

- (a) A stop sign beacon is one or two sections of a standard traffic signal head with a flashing circular red indication in each section.
- (b) Where two lenses are used, they shall be not less than eight inch nominal diameter size, aligned horizontally and they shall be flashed simultaneously.
- (c) The bottom of the housing of a stop sign beacon shall be not less than twelve nor more than twenty-four inches above the top of a stop sign.

Sec. 14-298-731 General Design and Operation of Beacons

- (a) Flashing beacon units and their mountings shall follow the general design specifications for traffic control signals, which shall include the following:
 - (1) Each signal unit lens shall have a visible diameter of not less than eight inches.
- (b) Beacons shall be flashed at a rate of not less than fifty nor more than sixty times per minute. The illuminated period of each flash shall not be less than one-half and nor more than two-thirds of the total cycle.

Sec. 14-298-732 Hazard Identification Beacon Location

The hazard or other condition warranting hazard identification beacons should largely govern their location with respect to the roadway. If used alone and located at the roadside, the bottom of the beacon unit shall be at least eight feet and not more than twelve feet above the pavement. Hazard identification beacons should not normally be suspended over the roadway, however if this mounting is used, clearance above the pavement shall be not more than nineteen feet nor less than fifteen feet. In no case should they be mounted on pedestals in the roadway unless the pedestal is within the confines of a traffic or pedestrian island.

Sec. 14-298-733 Intersection Control Beacon Location

An intersection control beacon should normally be suspended over the center of an intersection; however it may be mounted by other means if this is necessary to increase the visibility of the beacon. If suspended over the roadway, the clearance above the pavement shall be at least fifteen feet but not more than nineteen feet. If pedestal mounting is used, the bottom of the signal head shall be at least eight feet but not more than fifteen feet above the pavement. In no case should it be mounted on a pedestal in the roadway unless the pedestal is within the confines of a traffic or pedestrian island.

Sec. 14-298-734 Meaning of Lane Use Control Signal Indications

The meanings of lane-use control signals are as follows:

- (a) A steady downward green arrow means that a driver is permitted to drive in the lane over which the arrow signal is located.
- (b) A steady red x means that a driver shall not drive in the lane over which the signal is located, and that this indication shall modify accordingly the meaning of all other traffic controls present.
- (c) A steady yellow x means that a driver should prepare to vacate in a safe manner the lane over which the signal is located because a lane control change is being made, and to avoid occupying that lane when a steady red x is displayed.

Sec. 14-298-735 Design of Lane Use Control Signals

All lane-use control signal indications shall be in units with rectangular faces. Nominal minimum height and width of each face shall be twelve inches for typical applications. Each lane to be reversed shall have signal faces with a downward green arrow on an opaque background, and a red x symbol on an opaque background. Signal faces with a yellow x symbol on an opaque background may be provided. Each nonreversible lane immediately adjacent to a reversible lane shall have a downward green arrow displayed to traffic traveling in the permitted direction and a red x symbol displayed in the opposite direction. Other nonreversible lanes on any street so controlled may also be provided with these indications. The indications provided for each lane may be in separate units or may be superimposed in the same unit. When in separate units, the red x symbol shall be on the left, the yellow x symbol, if used, shall be in the middle and the downward green arrow symbol shall be on the right.

Sec. 14-298-736 Location of Lane-Use Control Signals

Lane use control signal units shall be located approximately over the center of the lane controlled. All lane-use control indications shall be located in a straight line across the roadway at right angles to the roadway alignment. The bottom of any lane-use control signal unit shall be not less than fifteen feet nor more than nineteen feet above the pavement grade.

Sec. 14-298-737 Operation of Lane Use Control Signals

During changeover periods, a steady yellow x may follow the termination of the steady downward green arrow. The steady red x shall follow the steady yellow x, when used, or at the termination of the steady downward green arrow. A clearance period of appropriate length shall be provided, during which the steady red x shall be shown in both directions over the lane, before the steady downward green arrow indication is shown for traffic in the opposite direction. When used, lane-use signals shall be operated continuously, except that lane-use control signals that are used only for special events or other infrequent occurrences and lane-use control signals on nonreversible freeway lanes may be darkened when not in operation. The change from normal operation to nonoperation shall occur only when the lane-use control signals display signal indications that are appropriate for the lane use that applies when the signals are not operated. The lane-use control signals shall display indications that are appropriate for the existing lane use when changed from nonoperation to normal operation. Also, traffic control devices shall clearly indicate the proper lane use when the lane control signals are not in operation.

Sec. 14-298-738 Application of Traffic Signals at Drawbridges

Drawbridge signals shall always be used in conjunction with gates and other types of protection commonly employed at drawbridges.

Sec. 14-298-739 Design of Movable Bridge Signals and Gates

- (a) The signal heads and mountings of movable bridge signals shall follow the standard design specifications for traffic control signals.
- (b) Nominal eight-inch signal indications are standard. However, if prevailing approach speeds are in excess of 25 mph or when considerations such as roadway width or geometrics, signal locations, conflicting lights or objects in the background, etc., indicate the need for greater signal effectiveness, signal heads with twelve inch diameter lenses should be provided.

- (c) Movable bridge signals may be supplemented with bells to provide additional warning to drivers and pedestrians. The standard three color (red, yellow and green) traffic signal indications shall be utilized.
- (d) A "Drawbridge Ahead" warning sign shall be used in advance of movable bridge signals and gates to give advance warning to motorists, except in urban conditions where such signing would not be practicable. Such signs may be supplemented by a hazard identification beacon.
- (e) If the movable bridge is close to a railroad grade crossing and there is a possibility that traffic may be stopped on the crossing as a result of the bridge opening, a traffic control device should be provided to give notification to the driver not to stop on the railroad tracks. Extreme care should be used in planning such installations to avoid creating confusion or hazardous conditions.
- (f) Signals on adjacent streets and highways should be interconnected with the drawbridge control, if indicated by engineering considerations.

Sec. 14-298-740 Location of Movable Bridge Signals and Gates

Two signal indications shall be provided for each approach to the movable span. Insofar as practicable, the height and lateral placement of signals should conform to the requirements for other traffic control signals. They should be located not more than fifty feet in advance of the warning gate or other barrier. Warning gates, where used, shall extend at least across the full width of roadway.

Sec. 14-298-741 Operations of Movable Bridge Signals and Gates

- (a) Traffic control devices at movable bridges shall be coordinated with the movable span so that signals, gates and movable span are controlled by the bridge tender through an interlocked control.
- (b) The green signal indication shall be illuminated at all times between bridge opening periods, except that when the bridge is not expected to be open for continuous periods in excess of five hours a flashing yellow indication may be used. The signal shall display continuous red when traffic is required to stop.
- (c) The yellow interval between the display of green and red shall be predetermined and shall be displayed normally approximately three to six seconds.

Sec. 14-298-742 – 14-298-799

Reserved